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THE BIRDS OF JAN MAYEN ISLAND.*

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[The following is a translation of a paper, communicated to the Ornithological Society of Vienna, giving the result of the observations made by Dr. Fischer during the sojourn of the Austro-Hungarian Expedition in Jan Mayen, as an integral part of the great scheme of International Circumpolar Stations.

Of the Ornithology of this remote island but very little seems to have been known prior to the visit of this expedition, and this, together with the fact that it occupies a sort of central position among the lands of the European Polar Region, make it at once a country of considerable importance and interest to the naturalist.

Situated between 70° 49′ and 71° 8′ of N. latitude, and 7° 26′ and 8° 44′ W. longitude, Jan Mayen is 600 miles due north of the Faroe Isles, 800 miles due west of the North Cape of Scandinavia, 350 miles east of Greenland, and 400 miles north-east of Iceland, and nearly midway between that island and Spitzbergen.

Regarding its physical features, it is much to be regretted that so little information appears to be available to us, though doubtless this expedition was the means of furnishing much that

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is interesting on the subject; but to this the writer has not had access. The only accounts in English, it is believed, are those of that learned whaling-Captain W. Scoresby, Jun., in his 'Account of the Arctic Regions,' (1820, i. p. 154, *et seq.*), and the still slighter sketch given by Lord Dufferin in that charming book, 'Letters from High Latitudes.' Scoresby spent some hours in the N.E. portion of the island on the 4th of August, 1817, and also surveyed the east coast line. From his observations Jan Mayen is in length about 30 miles from N.E. to S.W., and is nowhere more than 9 miles in breadth. It is situated on the edge of the polar pack, which in the winter and early spring extends from the east coast of Greenland in a N.E. direction, and is usually surrounded by ice in the spring. The coast on the north and east and part of the west consists of a kind of wall, generally precipitous and inaccessible, and with but few stretches of beach for landing upon. On the N.E. coast are three very singular glaciers occupying recesses in the cliff, here 1284 ft. high and nearly perpendicular, extending from the base of Mount Beerenberg down to the water's edge, and have the appearance of immense cataracts congealed instantly by intense frost. In general appearance Jan Mayen is strikingly like Spitzbergen both in colour and character. The small portion of the island explored bore evidence everywhere of ancient and recent volcanic action. Two volcanos were discovered in close proximity,* and fragments of lava were numerous, and blocks of burnt clay occurred in abundance, whilst the sand on the beach was a coarse black mixture of iron-sand, augite, and pyroxene. The most remarkable feature of the island is the wonderful mountain Beerenberg, or Bear Mountain, which rises at the northern extremity of the island almost perpendicularly to a height of 6870 ft. This, Scoresby says, sinks every other object into comparative insignificance, since it rises in majestic importance into the region of perpetual frost, and he was able to see it from the deck of his vessel when at a distance of from 95 to 100 miles. Plants were found to be scarce, and a considerable distance was travelled before the least sign of vegetation was encountered, but afterwards, scattered among the volcanic minerals, were found tufts in full bloom. Among the plants recognised were *Rumex digynus*, *Saxifraga tricuspidata* and *oppositifolia*, *Arenaria peploides*, *Silene acaulis*, and *Draba verna*. Near the sea-shore the burrows of Foxes were seen, and traces of their feet below high-water mark, but none of these animals were met with. The feet-marks of White Bears, and probably of Reindeer, were also perceptible. The birds were not so numerous as Scoresby anticipated. He saw Glaucous Gulls, Fulmars, Puffins, Guillemots, Little Auks, Kittiwakes, and Terns; several cetaceous animals, principally of the species *Balæna physalis*, but no Mysticetæ.

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* Scoresby and other whaling-captains saw one of these volcanos on Jan Mayen in action in the spring of 1818.

On the 4th of August, 1817, all the highlands were covered with snow and ice, and the lowlands—in whose valleys and deep cavities large beds of snow had been collected—still retained part of their winter covering down to the very border of the sea.

It now remains to say a few words regarding the experiences of the Austro-Hungarian Expedition, which spent thirteen months on this inhospitable island. The following particulars have been culled from the 'Proceedings of the Royal Geographical Society' for the years 1883—5:—The party consisted of fourteen persons, under the command of Lieut. Emil von Wohlemuth, of the Imperial and Royal Navy, two other naval officers, Dr. Fischer, to whom we are indebted for this valuable contribution to Arctic Ornithology, and fourteen sailors. The Expedition embarked in the war-steamer 'Pola,' and left Pola on the 2nd of April, 1882. Owing to the large amount of ice encircling Jan Mayen in the spring of that year, the first attempt to land the party proved unsuccessful; but on the second attempt the Expedition was safely landed on the 13th of July, 1882. The position of the observatory and station was in 70° 59′ N. lat. and 8° 28′ W. long. Among the experiences of the winter the most remarkable were the violent northerly storms. Snow began to fall heavily in the latter part of August, but the cold was not severe until November. In December the island was surrounded on all sides by ice, and in January the cold reached 25·6° below zero of Fahrenheit. The temperature was less severe than was expected, but the storms were terrific: the waves washed over all the lower-lying parts of the coast, and carried drift-wood and loose blocks of ice far inland, great ice-masses being cast up and stranded near the observatories, which were 250 paces distant from the sea. The snow was 7 ft. deep in the neighbourhood of the station, and when the thaw commenced in spring all excursions were stopped, on account of moving snow and water, and the cascades leaping from the cliffs were magnificent sights. The party re-embarked on board the 'Pola' on the 6th of August, 1883, after spending over a year on Jan Mayen without any casualty, and having been completely successful in attaining the objects for which it was sent out.—W. E. C.]

Bird-life is comparatively well represented, but only sea-birds breed there regularly, and in considerable numbers.

Of Birds of Prey only the Iceland Falcon [" der Isländerfalke"] (*Falco candicans*), the Peregrine (*Falco peregrinus*), and the Snowy Owl (*Nyctea nivea*), were observed.

The Falcons only showed themselves in spring and in the first summer weeks, and appeared to feed on the arriving migratory birds; later on, after the appearance of the large Gulls, they were driven away by these pugnacious birds appearing in considerable numbers.

A remarkable phenomenon is the occurrence of some migratory birds at Jan Mayen, particularly the insectivorous birds. The following, *Erithacus rubecula, Saxicola œnanthe, Turdus pilaris, T. musicus, Motacilla alba, Anthus aquaticus,* were obviously in the act of their spring migration.

S. œnanthe is known to wander as far as Greenland; the other species (with the exception of *Motacilla alba*, which is observed singly in Greenland), have so far not been observed in that country, nor in Spitzbergen nor Novaya Zemlya. It is supposed from this that these migrants are driven by storms on to Jan Mayen during their passage to Scandinavia or Iceland, a supposition which is confirmed by the fact that these birds arrived with southerly winds.

The appearance of a Blackbird at Jan Mayen on the 23rd of December was inexplicable. These birds had without doubt long ago gone south from the northern breeding-places in Scandinavia and perhaps Iceland. Whence, then, could this lonely wanderer in the middle of winter have come? It is also inconceivable that the bird could have sojourned for any considerable time on Jan Mayen, for on this island in winter it could not find any nourishment at all, and must consequently have perished within a short time of its arrival.

Linota hornemanni is a true arctic species, which is known in Greenland as a resident, and beyond that only in Spitzbergen, Iceland, and now in Jan Mayen.

The appearance of two species of Bunting is not in the least surprising, as these almost belong to the high north, although only the Snow Bunting, which appears in large numbers, breeds on the Island, while a single example of the Lapland Bunting was found in a flock of Snow Buntings.

The shore-birds, those voyagers of the air, of which many are almost cosmopolitan, and in the enviable position of spending summer in Greenland, Iceland, Spitzbergen, or Kamschatka, the winter in Africa, the Sunda Isles, or the Moluccas, have also their representatives on Jan Mayen, even if, as it appears, only on migration. Thus *Charadrius auratus*, *Ægialitis hiaticula*, *Strepsilas interpres*, *Numenius phæopus*, *Tringa maritima*, *T. cinclus*, *T. schinzii*, and *Charadrius arenaria* are found on the island.

Remarkable is the appearance of *Rallus aquaticus*, the most northern occurrence of this bird.

Largely represented both in species and in individuals are the Swimming Birds, which (with exception of the Storm-bird, *Fulmarus glacialis*, that, with short intervals, remains throughout the winter) spend only the most favourable period of the year on the island, and breed there. It is these species which are met with in North Scandinavia, Novaya Zemlya, Greenland, and Spitzbergen, and in part also breed there. That we were not so fortunate as to obtain eggs of birds breeding on the ground is explained by the fact that the low level places are at all times accessible to the Arctic Fox.

The observations made by me [Dr. Fischer] at Jan Mayen are reported word for word; my colleague [Herr von Pelzeln] having taken upon himself the task of reproducing in an unaltered form the notes made on the spot.

The species of birds observed on Jan Mayen have been tabulated in a summary, along with the species occurring in the high north (Smith Sound and North Polar Basin, Greenland, Iceland, Spitzbergen, Novaya Zemlya, including Waigatsch). [It has not been thought necessary to reproduce this long list of species.—W. E. C.]

Falco candicans, Gm.—Male shot 7th of May. Iris brownish black, bill and feet light bluish white. In its stomach were found three small birds' bills, feathers, and bones. On the 9th April we saw the first Iceland Falcon, which dropped on to the Snow Buntings in front of our station. Three appeared at once on the same day; we fired at them without killing any. Wind blew on this day from S.E. with great strength. On the 7th of May I shot a Falcon, which was unfortunately very dirty. These birds now appeared oftener at the station. On the 10th of May another Falcon appeared, and, although we received him with two shots, and although he lost his right "flag-feather," he appeared two hours later, being recognisable by this defect. A volley received him at thirty yards, when he flew away, but came again twice the same day. May 11th: The Falcon was here again.

The Burgomaster Gulls [*Larus glaucus*], which, in the spring, visit their breeding-places on the bird-hills, always attack the Falcons, and, after a long fight in the air, force them to beat a retreat.

In May and June the Falcons appeared pretty often at the station, where they helped themselves to the Snow Buntings, which we attracted to the station by scattering food. With the disappearance of the Snow Buntings the Falcons also left the island. The example procured is very similar to the specimen figured in Naumann's 'Birds of Germany,' Appendix, plate 390, fig. 1; but on the back and wing-coverts the spots are a little larger. [From the geographical position of Jan Mayen it is probable that both the Greenland and Iceland Falcons visit the island. The bird obtained belonged to the former species.—W. E. C.]

Falco peregrinus, Gm., Peregrine Falcon. — Early on April the 6th a Peregrine swooped down upon the Buntings at the station. Before I returned with my gun he had already got off with his prey. Another Peregrine appeared at the station on April 25th. The Imperial Museum in Vienna possesses a Peregrine which came from the south portion of Novaya Zemlya, captured during the northern journey of Count Hanus Wilczek, in 1872. [The occurrence of this species in Jan Mayen is interesting, for it is usually believed not to have occurred in Iceland. In 1884, when in Iceland with Mr. Backhouse, we had described to us a Falcon which had bred in the cliffs of the Fljotsdalsheii, which we could only assign to this species. It is not known to have occurred in Spitzbergen. The American ornithologists do not include the type as a Nearctic boreal bird, but the race *F. peregrinus anatum* (Bonap.) has a high range, and is doubtless the species said to have a high northern breeding range in Greenland.—W. E. C.]

Nyctea nivea, Daudin, Snowy Owl.—The Snowy Owl was often and in different situations observed on the island, where it winters. We failed, however, to shoot one. We saw the first on 19th October, 1882. In the uncertain light prevailing at the time it was at first taken for a Burgomaster Gull. Its mode of flight, however, struck me as peculiar, and we soon had an opportunity of convincing ourselves that we were dealing with a large Snow Owl. It flew around our station for many days, being attracted by the poultry, but did not come within shot. On the 13th December, when returning from skating, we saw what appeared to us a smaller kind of Owl, which swooped down upon the dogs. I had no gun,—in fact, nothing in my hands,—otherwise I could have killed it when it was at a distance of barely three metres, hovering for several seconds at one place over the dogs. I ran to the house for my gun: on my return I saw the Snowy Owl sitting on a large stone block by the north lagoon. I went up to her and shot at her breast as she was sitting there at a distance of fifty or sixty paces, but she flew away, although hit. On the 7th of January an Owl was seen. On the 14th of March a Snow Owl was sitting on the top of the sailor's grave; the dog ran up to it and frightened it away. Our search for the bird was unsuccessful, it being half-past eight in the evening, and already pretty dark. In April, May, and June the Snow Owl was repeatedly seen, sometimes on the ice, sometimes on land. Under the Beerenberg many feathers of the Snow Owl were found; the bird was also seen there once. In winter, and especially in the first weeks of spring, which brought very cold weather and closed ice, all the birds drew off, and one could then see the Snow Owl tugging away for hours at a hard-frozen bird, mostly the remains of fox-meals. As Jan Mayen is not inhabited by any small Mammalia, the food of the Snow Owl on this island consists only of birds. In spring and autumn the exhausted migratory birds offer prey easily to be obtained. In summer the young birds falling from the nests, and the birds killed by stones loosened by the process of thawing, afford a plentiful supply of food.

Erithacus rubecula, L., Redbreast.—Male shot 5th of May. On May 6th I again saw a bird of this species. [This must be regarded as the most north-westerly occurrence of this species. It has not, I think, been recorded for Iceland or Greenland.—W. E. C.]

Saxicola œnanthe, L., Wheatear.—At the beginning of May the first Wheatears appeared. On the 4th of May the first specimen was shot. Although the number of individuals was large, the birds only showed themselves singly. As the tide ebbed, these birds, in company with Sandpipers and Plovers, collected small crabs, and other marine creatures on the shore. In summer we saw a specimen off and on until we departed from the island. On a comparison of specimens from Jan Mayen with the series in the Imperial Museum, *viz.*, a male of Herr Moschler's from Greenland, several specimens from Austria, two of von Heuglin's original specimens of his *Saxicola frenata* out of N.E. Africa, and lastly, with five specimens obtained by Emin Bey from Central Africa (Lado and Redjaf, February, March, October), complete accord showed itself, and the northern specimens are coloured quite as intensely as those which spring from the heart of Africa.

Motacilla alba, L., White Wagtail.—On the 17th of May I noticed the first Wagtails, of which two were shot. These birds were only to be seen for a few days on the island. The specimens obtained agree perfectly with the representations given by Naumann in his 'Atlas,' tab. 86, fig. 1, male in summer plumage.

Anthus arboreus, Bechstein, Tree Pipit.—I only saw one specimen of the Tree Pipit on the first days of July; the same is now in the collection brought home. [The Tree Pipit has not been recorded for Iceland or Greenland, but occurs in the far north of Scandinavia. The Meadow Pipit, however, is a common summer visitor to Iceland, and occasionally visits Greenland.—W. E. C.]

Anthus aquaticus, Bechstein [= *A. spipoletta*, L., Water Pipit.]—Two specimens were observed and shot in the first days of June. In plumage they agree with the young bird (Naumann's plate 85, fig. 4). [*Anthus aquaticus*, Bechstein, is a synonym of *A. spipoletta* (Linn.), a bird whose northern range in Europe does not extend much beyond the central portions of the Continent. It is most probable that the birds obtained in Jan Mayen belonged to the Red-breasted form of the Rock Pipit (*A. obscurus*), a bird which is common in Northern Europe, and also in the Faroe Isles, though unrecorded, it is thought, for Iceland. *A. ludovicianus* occurs and breeds in Greenland.—W. E. C.]

Turdus pilaris, L., Fieldfare.—On the 4th and 5th of May several specimens were observed, and four of them shot. [This bird has occurred once in Iceland, in December, 1885 (Gröndal, 'Ornis,' 1886, p. 357), but is not known to have occurred in Greenland.—W. E. C.]

Turdus musicus, L., Song Thrush. — This was met with in the month of May in fair numbers, but always singly or in pairs. We never heard the song of this bird at Jan Mayen. [I think it is probable that the Redwing (*T. iliacus*) is meant. This bird is a summer visitant to Iceland, and has occurred accidentally in Greenland. The Song Thrush (*T. musicus*) is unknown in both these countries, and, although it occurs in the extreme north of the Scandinavian Peninsula, yet it is scarcely probable that it would occur in some numbers in Jan Mayen.—W. E. C.]

Turdus merula, L., Blackbird. — On the 23rd of December, 1882, a Blackbird appeared at our station, and, although we had had snow-fall for weeks, it hopped about quite cheerily, until it was shot for the collection; a male after the first moult, with black plumage drawing into slate-grey, and with black beak. [The Blackbird has occurred several times in Iceland, and on two occasions in December ('Ornis,' 1886, p. 357, and 1887, p. 157), but has not been known to breed there.—W. E. C.]

Linota hornemanni, Holb., Greenland Redpoll.—Individuals of this species, as well as pairs, appeared in the autumn months, and also off and on in May and June. They disappeared, however, on the same day on which they showed themselves. Several specimens were obtained, but only one well-shot was brought home. The characteristics distinguishing this species from its near allies have been very fully defined by E F. von Homeyer in the 'Journal für Ornithologie,' 1879, p. 182. In that paper Greenland only, and, according to Dresser, Spitzbergen, is given as its habitat. The Imperial collection at Vienna possesses two specimens of *L. hornemanni*, stated to be from Iceland, and obtained by Herr Einbeck in 1829.

Plectrophanes nivalis Snow Bunting.—We observed the first Snow Buntings on the 7th of September, 1882. At the commencement they were to be found on the southern slopes of the mountains, where not only a richer vegetation, but also plants more beautifully developed, and bearing much seed, are to be met with. From the beginning until the 15th of October these birds were to be seen on the edge of the shallow trough-shaped puddles which lie around the southern lagoon, whither the frequent storms blew the seeds, which, after the drying up of the water, were left deposited on the edge or bottom of the pool; at this time, too, the Snow Buntings were to be seen on the steep "bird-walls," in the fissures of which, richly covered with guano, there flourishes a luxuriant vegetation. All the specimens shot in the autumn were very fat and variously coloured. After the 31st of October these birds were no longer observed. From the 18th to 24th of February, 1883, Snow Buntings were again seen, although mostly singly. In the month of March Buntings were to be seen during every fairly long excursion. From the 25th of March onwards one saw already flocks of from five to fifteen specimens together. At the end of March these birds were to be seen in large numbers, especially around the station, where they always found nourishment. A stop was put to the shooting of Buntings, but in a couple of days we caught about thirty by a very primitive method. May 10th, 1883: although as many as twenty Buntings were daily found frozen near the station, about sixty were still to be seen, which were fed several times daily. Until the 10th of May it was continuously cold—stormy winds, snow-fall, and snow-drifts. Snow Buntings were to be seen until right into July. A pair appeared to breed on the island; the male came daily a few times to the station, flying with song from stone to rock; our only song bird cheered us with his song,—but even this last one fell a victim to a Falcon. I was not able, by any means, to keep imprisoned Snow Buntings alive. They certainly took food immediately on the first day, but succumbed nevertheless sooner or later,—at latest in three weeks. The specimens brought home showed every degree of change in plumage, starting from the immature dress to that of the adult bird in full plumage.

Plectrophanes calcarata, Pall., Lapland Bunting.—A single bird of this species was seen on the 17th of May, in a flock of Snow Buntings, and killed. It was in its most beautiful summer plumage. [Though breeding throughout Greenland, this species is rare, seldom seen in Iceland, and is not known to have occurred in Spitzbergen.—W. E. C.]

Vanellus cristatus, M. & W., Lapwing.—About thirty birds of this species flew across the island, at a considerable height, on the 8th of April [1883]. An exhausted Lapwing fell down under the Bird Cliff; it was in full summer plumage. Beyond a pair known as coming from Greenland, this would probably be the most northerly appearance of this bird, which generally only reaches southern Iceland. [This species occasionally wanders to both Iceland and Greenland.—W. E. C.]

Charadrius auratus, Bechst., Golden Plover.—As we were returning towards evening on the 29th of June from a boat excursion, we found a pair of Plovers off Mary Muss Bay, both of which were killed; these were the only specimens we saw. According to the time of year at which we met with these birds, one might suppose that they bred on Jan Mayen. We can, however, say posiitvely this was not the case; we have scoured the island so often that it seems to me simply impossible that this bird should have been overlooked. Holboll ('Fauna Grönlands,' p. 27) remarks that this species is very rare in Greenland, and, according to his views, does not breed there. From the white axillaries, it appears that the specimens brought back from Jan Mayen belong to the European form of Golden Plover. [It breeds annually in Eastern Greenland, and in Iceland is one of the commonest summer birds.—W. E. C.]

Ægialitis hiaticula, L., Ringed Plover.—In July and August, 1882, very rare; observed very often at the end of August and in September, generally in companies of four to six, and in pairs. One could approach them easily to within fifteen paces. In spring, 1883, they appeared in great numbers; and in May, June and July they were met with so numerously that we could often have a meal of them. In spite of the fact that the Ringed Plover was always to be seen, with only very short interruptions of a few days, we failed to find any evidence of its breeding in Jan Mayen. It appears throughout the whole of the high north, with the exception of America. [Breeds on both coasts of Greenland.—W. E. C.]

Strepsilas interpres, L., Turnstone. — Two specimens in summer plumage were shot on the 27th and 31st of May. Three others in winter plumage were shot in September, and a young bird on the 2nd of that month. Appeared on the spring migration for several days in the month of May, and in the autumn migration during the first days of September. This species is widely distributed throughout the high arctic regions, and breeds also in Greenland, from which country it was probably shaping its course across Jan Mayen, since young birds were seen among the migrants.

Numenius phæopus, L., Whimbrel. — This bird was not very often seen in the month of June, and was generally met with in pairs. Judging by the remains found, it appears frequently to fall a prey to the Arctic Fox. Although I noticed for a long time a pair which sojourned amongst the drift-wood at the north lagoon, I could not convince myself that they nested there. One day I found only a feather, and a part of the head with the beak. Hölboll obtained this species in the South, as well as in North Greenland. [The Whimbrel is a common bird during the summer in Iceland. It is only of occasional occurrence in Greenland, and one was picked up, though long dead, in Spitzbergen, but may have been carried there on the ice.—W. E. C.]

Tringa cinclus, L., Dunlin. — Met with in June and the beginning of July in flocks of as many as ten individuals, also in company with *Æ. hiaticula*, and was not very shy. Male shot on the 15th of June, and female on the 16th. According to Heuglin ('Ibis,' 1872, p. 62), common in September, in Novaya Zemlya: according to Fabricius and Reinhardt, *T. cinclus* appears in Greenland. It is remarkable that the specimens which were shot on Jan Mayen in June were not in summer plumage, but showed a youthful-looking dress; they differ, however, from the average European young birds by a darker—in fact a blacker—shade on the upper parts. Two specimens, obtained by Graf Wilczek in Novaya Zemlya, agree perfectly with those from Jan Mayen. Since, as Naumann asserts, some individuals of *T. cinclus* still wear winter plumage in their spring migration, the above-mentioned northern specimens may be regarded as birds which have started for their summer quarters before putting on their gala dress. The transition to the nuptial dress with this species appears to consist in the feathers of the upper side becoming almost black instead of grey, with not very conspicuous whitish or rust-coloured edges.

Tringa schinzii, Brehm. — Seen on Jan Mayen in large numbers at the end of May, June, and beginning of July, mostly in companies of about fifteen, with other allied species. In autumn, towards the end of August, this bird appeared mostly in pairs or in small flocks, and remained on the island until the middle of September. It was not at all shy, and formed a much appreciated dish on our table. *T. schinzii* could always be distinguished at a distance from *Tringa cinclus* by its yellower back, and by its markedly smaller size. According to Hölboll and Paulsen, *T. schinzii* breeds in Greenland in the Julianshaab district ('Fauna Grönlands,' p. 89). [*Tringa schinzii*, Brehm, is regarded by British ornithologists as a small race of the Dunlin (*T. cinclus*, Linn.).—W. E. C.]

Tringa maritima, Brünnich, Purple Sandpiper. — The first observed on Jan Mayen appeared at the end of August, and in September, and during the autumn migration sojourned partly in pairs and partly in small companies. This species of *Tringa* appeared on the island in the spring migration at the end of May and in June, and was to be seen, like most of the allied species, on the shore, and more especially in the neighbourhood of the mouths of brooks. This species winters generally in northern latitudes, and travels only to a small extent into southern regions —exceptionally, as Finsch indicates (II. Deutsche Nordpolarfahrt, p. 207), as far as the Cape of Good Hope.

Calidris arenaria, L., Sanderling. — This bird appeared in autumn, at the end of September, mostly in companies of from three to six individuals, and was to be seen up to the middle of October: during the spring migration, although not so numerous as the allied species, it visited the island in May and June. It was so tame as to be easily surprised by the Arctic Fox. Of this species, which breeds in the Arctic regions of the New and Old World, a specimen was killed in the month of June, which differs from the others in its smaller size, and carries the youthful plumage as represented by Naumann (plate 182, fig. 3). As in the month of June no young birds could be expected to be met with, the one obtained must be looked upon as a bird which had remained behind from the previous year.

Rallus aquaticus, L., Water Rail.—On the 15th of October a Water Rail was captured, surprised in the evening in its hiding-place. It was pretty cheerful, but, as it was difficult to keep alive, it was converted into a skin. The Water Rail in Europe certainly goes pretty far north. It has been observed in Norway, on the Orkney Islands, Färoes, and Iceland, and is said to winter in the neighbourhood of hot-springs in the last-named island. The specimen caught on Jan Mayen on the 15th of October may perhaps be the most northern specimen hitherto collected. [This species breeds in limited numbers in Iceland.—W. E. C.].

Bernicla brenta, Pall., Brent Goose.—I only saw one bird of this species, on the 23rd of May, at sea. It found its way into our collection.

Harelda glacialis, L., Long-tailed Duck. — On the 7th of December I saw a specimen at sea, and shot it. In spring, and up to our departure from Jan Mayen, a pair were to be seen on and off. A pair took up their abode almost daily, in the afternoon, on the fresh-water lagoon near our station; they were, however, so shy that it was impossible to get within shot. I could not find the nest of this duck. It differs from the young birds represented by Naumann, the brown being spread more widely on the sides of the head.

Somateria mollissima, L., Eider Duck.—In Tromsö we saw this species of duck in such numbers that it is difficult to believe that it was formerly still more numerous. In the first days of our landing on Jan Mayen until the 14th of August I occasionally saw single specimens of this species, males preponderating, in the north lagoon or neighbouring bight. October 15th, swarms of male Eiders, with which were a few females, passed daily; they were, however, so shy that I could not get a shot. On Dec. 6th I shot a single passing female at sea. In spring the Eiders showed themselves for the first time on the 8th of April, in a flock of forty birds, mostly females and young dark-coloured males, led by a white specimen of the latter sex. From the 3rd of May Eiders were seen in large numbers, and it was also easy, by following the call of the males, to get within shot of the birds sitting on the ice-floes in the fog. The ice-floes pushed by the drift-ice were often covered with hundreds of Eiders. Until our departure from Jan Mayen, in 1883, they were met with in very large numbers; they were found in fresh-water lagoons and puddles, as well as on low rocks at sea, where they also moulted. Several of these birds attempted to nest, since broken eggs and a nest of Eider-down were found. As happened with all birds breeding in low places, they fell a prey to the Arctic Fox, who can get everywhere in Jan Mayen. Amongst the males shot at Jan Mayen in spring, in May and June, there was found a progressive series of transitions from the brown to the white gala-dress. On two specimens killed on the 30th of June there was a broad white breast-band, of which the individual feathers, however, still showed brownish edges. Various feathers of the back were white, with more or less broad brown edges. Also in the rest of the plumage a more or less strong mixture of white was noticeable. A dark hemming-in of white breast- and back-feathers seems to indicate clearly, as Dr. Finsch has already shown in his second contribution to the 'Avifauna of Greenland' (p. 361), that, in addition to the moulting, discoloration of the plumage has taken place. While, as mentioned, a number of males arrived at Jan Mayen in brown dress, other specimens arrived in full gala-dress. This gala-dress was carried by many specimens until August, when the 'Pola' left Jan Mayen, while others were in full change, so that they were not in a position to fly. The latter showed a pied colouring of the plumage.

Somateria spectabilis, L., King Duck. — In the first days of our sojourn in Jan Mayen I saw a pair of males of this species.

Colymbus glacialis, L., Great Northern Diver. — From the day of our arrival at Jan Mayen I saw this bird swimming about singly in the north lagoon. Both I and Count Palffy shot several times at this Diver, which dived under water every time before the lead told. On the 8th of December the lagoon was already frozen, and the bird gone. On the 11th of January, after the ice had been pushed aside by the E.S.E. wind, I saw a large Diver, but could not decide whether it belonged to this species. From the 24th of May onwards, every time I went to sea I saw "Ice Divers," sometimes singly, sometimes in companies of four, swimming about in sheltered bights. They were also continuously to be found on the fresh-water lagoon. During my boat excursion, lasting fourteen days, towards the southern portion of the island, I daily saw several of these birds moving about in the bights. New and old foot-prints in the loam were to be seen on the land near the fresh-water puddles, and, as this was the case even up to the end of July, one may correctly assume that this Diver breeds on Jan Mayen. A female bird shot on the 29th of June was in full breeding plumage.

Colymbus septentrionalis, L., Red-throated Diver.—I saw this Diver singly and in pairs, in autumn, in the north lagoons. We also heard now and then the call of this bird (reminding one of a human wail) as it flew across the island at a great height. We could not get at one. The continued residence of the same in and near the north lagoon, in a chosen hidden corner, favours the conclusion that this Diver breeds on Jan Mayen. At last I shot one flying across the lagoon. The specimen brought home was obtained on the 10th of June, and proved to be a female in full summer plumage.

Podiceps arcticus, Boie = *Podiceps cornutus*, Gm., Sclavonian Grebe.—I saw a single specimen on the 23rd of June, which I shot. Female * * * [description]. [This bird is a common summer visitor to Iceland, but only occasionally occurs in Greenland; its occurrence on Jan Mayen Island is believed to be the most northerly on record.—W. E. C.]

(To be continued.)

NOTES AND QUERIES.

MAMMALIA.

Cat with Eyes of different Colours.—There is at the present time in this village a full-grown white Cat which has eyes of different colours. The iris of one is of the ordinary pale greenish yellow, while that of the other is of a beautiful pale, but bright and pure, cobalt-blue.—O. V. Aplin (Bloxham, Oxon). [White cats with blue eyes are nearly always deaf.—Ed.]

Variety of the Field Vole.—A curious variety of the Short-tailed Field Vole (*Arvicola agrestis*) was captured last month in this neighbourhood. The head and back are sand-coloured (like a sandy rabbit), this colour shading off into nearly white on the under parts.—O. V. Aplin (Bloxham, Oxon).

Bears in the Tyrol.—The European Brown Bear, it appears, is not yet extinct in Switzerland. Towards the end of May last many distinct traces of Bears were found in the Randena Valley, Tyrol.

The Moufflon in Hungary.— The Moufflon has taken so kindly to the climate of Hungary that at Ghymes, where Count Forbach has established a colony, they already number 400, and have also spread into other distant properties. The Hungarian Sports Protection Association is on the *qui vive*, and has laid before the Minister of the Interior proposals for the protection of these animals, close times being suggested as follows:—For rams, Nov. 15th to May 15th; for ewes, from Feb. 1st to Sept. 15th.

Grey Variety of the Hare in Dorsetshire.—During the past autumn a curious variety of the Hare was killed on the borders of Hants and Dorset, I believe on the estate of Lord Shaftesbury. The ordinary brown colour was replaced by silvery grey, darker on the back and paler beneath, interspersed with darker but white-tipped hairs, giving it a singularly grizzled appearance. It proved to be a male, and not full-grown. — G. B. Corbin (Ringwood, Hants).

A Black Variety of the Fox in the New Forest.—Toward the end of July last, just before cub-hunting had commenced in the New Forest, a Fox was seen, which at a little distance appeared to be uniformly black, except the under parts, which were much greyer. Is not this a very uncommon variety in England?—G. B. Corbin (Ringwood, Hants).

[It may be safely asserted that black or partially black Foxes in England are very rarely met with, or they would be surely detected by the keen eyes of fox-hunters and duly reported. We do not remember more than one such case to have been previously noticed. This was reported by the late Mr. R. F. Tomes, of Welford-on-Avon, who described a Fox which had been killed in Warwickshire as having all the under parts of a greyish black hue. But in this case, as will be observed, the animal could not properly be described as black, but only partially so. Occasionally Foxes are killed in which the tip of the brush is black.—Ed.]

Cream-coloured and Black and White Moles. — About the middle of April last several cream-coloured Moles were taken in this neighbourhood, where others have been previously met with, and one of them (the finest I have seen of this colour) was brought to me. The man who caught them informed me that a short time before he had taken a black and white one, but this I did not see.—G. B. Corbin (Ringwood, Hants).

BIRDS.

Two-barred Crossbill in Surrey. — I am able to record the occurrence of the Two-barred Crossbill (*Loxia bifasciata*) in this neighbourhood. Two specimens, a male and a female, were killed on Frith Hill, less than three quarters of a mile from the town of Godalming, on the north of it, at a distance of some 300 yards from each other, on November 28th. The former was shot by a gardener named Thomas Groundsell, the latter by James Chandler, he too a gardener; with the male was another bird (possibly the female), which escaped; with the latter was a female Common Crossbill, which also was shot. The birds in both cases were feeding on the seeds of the larch, above 900 of which were taken from the crops of the three. They were by no means wild; indeed, the gun aimed at the two females missed fire three times, the birds scarcely changing their position before the fatal discharge was effected. The comparatively few instances in which this species has visited the British Isles will be accepted as my apology for these particulars. The skins of the birds are in my possession. I observe that 'The Field' of Nov. 30th contains a notice of a flock of White-winged Crossbills near Croydon, out of which two were shot; and that in the impression of the same paper of December 7th a correspondent writes that an immature specimen was shot on August 12th near Easington, in Holderness, Yorkshire. — H. BENSON (Farncombe Rectory, Godalming).

Pied Blackbirds, Rooks, and Jackdaws.—A curiously pied Blackbird was lately caught here. Four of the tail-feathers are white, there is a white patch on each shoulder, and the breast, back, and head are freely spotted with white; the legs and feet of a mottled dirty white colour. Mr. Pratt, of Brighton, tells me that an unusual number of pied and white varieties of Blackbirds, Rooks, and Jackdaws have passed through his hands during the past autumn. He mentioned one specially interesting specimen of a white Jackdaw.—E. P. LARKEN (Gatton Tower, Reigate).

Richards' Pipit and Spotted Redshank in Kent.—I obtained a specimen of Richards' Pipit about the middle of November last. It was caught by a birdcatcher near Dover, but, in pulling the net over, one of the rods struck and killed the bird. I observe that several Spotted Redshanks are recorded in your last number as having been met with in the neighbourhood of Harwich during the autumn. One of the birds was killed near Stourmouth, in this neighbourhood, about the same time, and perhaps was one of the same flight. I saw this specimen, which retained much of the dusky summer plumage. While shooting the woods here, at the end of November, a Great Shrike came out close to one of the guns. My friend, who knows the bird well, said, the day being a bright one, it looked like a gleam of silver as it went past him. It went on to an adjoining cover, but we did not meet with it again.—W. OXENDEN HAMMOND (St. Alban's Court, Wingham, Kent).

Osprey in Middlesex.—Mr. Cooper, the well-known taxidermist, of Radnor Street, St. Luke's, kindly brought for my inspection, on Oct. 22nd, a fine male Osprey which had been shot the previous day on the river at Barnes, where it had been observed for some time before it could be approached and secured. As may be supposed, the Osprey is not a common bird in the metropolitan county; but as an autumn migrant, going south for the winter, it is occasionally observed at that season fishing in the Thames, or in some piece of water large enough to attract it. I have notes of its appearance and capture at Maidenhead, Laleham (twice), Uxbridge, Ruislip Reservoir, Hendon, Southgate, Enfield, and now at Barnes, always in September, October, and November.—J. E. Harting.

Osprey in Notts.—One of these fine, but now, alas! rare birds was shot about the middle of November last by Mr. George Eddison at Shire Oaks Hall, in this county. When he first noticed it, it was hovering over one of the pieces of water near the house, but was being teased by a number of Rooks, who drove it over him, when he shot it. I hear it was a very fine bird, and in good condition. Shire Oaks is just the place to attract an Osprey, having several beautiful sheets of water full of fish of good size, and many species.—J. Whitaker (Rainworth, Notts).

[What a pity that in a spot so well suited to its habits it could not be allowed to remain unmolested. To see an Osprey catch a fish is one of the finest sights in Nature.—Ed.]

Little Gull on the Thames.—Mr. Cooper, of Radnor Street, kindly showed me, while still unskinned, a nice specimen of the Little Gull, *Larus minutus*, which his son had shot the previous day (Oct. 26th) from the Essex shore below Tilbury, at a spot known as Mucking Bight. It was a bird of the year, with the barred shoulders peculiar to its age in the Little Gull, and even more conspicuous in the Kittiwake, *Larus tridactylus*. The legs and feet were of a dull flesh-colour, as in *Larus marinus* and *L. argentatus*.—J. E. Harting.

Little Gull at Hastings.—Two specimens of the Little Gull (*Larus minutus*) have been obtained recently at Hastings and Rye. One shot near Rye was brought to Mr. Bristowe, naturalist, at St. Leonards-on-Sea, about the last week in November, and the other shot close to Hastings early in the month.—Thomas Parkin (Fairseat, High Wickham, Hastings).

Little Gull at Harwich.—An immature specimen of *Larus minutus* was shot in the harbour here on the 4th December. On dissection it proved to be a female. It weighed but 3¾ oz. Length from tip of beak to end of tail, 11¼ in.; expanse of wing, 26¾ in.; length of tail, 3½ in.; length of bill, ⅞ in.; gape, 1½ in.; length of tarsus, 1 in.—F. Kerry (Harwich).

White Variety of the Little Gull.—On Oct. 29th, 1889, a white variety of the Little Gull (*Larus minutus*) was shot by a fisherman named Leonard Mainprize, about five miles E.N.E. of Flamborough Head, and was secured by Mr. Bailey for the collection of Mr. John Marshall, of Taunton, to whom it was forwarded in the flesh. Having been sent by him to London to be stuffed, I had an opportunity, through the kind offices of the editor, of seeing it, and comparing it with other specimens in the normal plumage. It is not many degrees removed from an albino, but the terminal bar on the tail is quite visible in a pale shade of brown, showing it is not adult. The occiput and ear-coverts are faintly mottled with the same tint, and the hue of the grey mantle is quite perceptible on the back The wings above and beneath are pure white, and Mr. Bailey particularly noticed their length and narrowness before the bird was skinned. — J. H. Gurney, Jun. (Keswick Hall, Norwich).

Dimensions and Weight of the Roseate Tern.—Having received last autumn an adult pair of these beautiful birds from North Wales, it may be of interest to record the dimensions and weight of the sexes :—

	Male.	Female.
Weight	3 oz. 12 dr.	3 oz. 10 dr.
Total length	16¼ in.	15⅛ in.
Length of wing	9½ in.	9⅜ in.
Expanse of wing	28 in.	27¼ in.
Tail from base to end of centre feather	3 in.	2⅞ in.
„ to end of outside feather	7½ in.	6⅝ in.
Length of bill	1½ in.	1⅜ in.
„ of tarsus	1¼ in.	1⅛ in.
Toes, middle	⅞ in.	⅞ in.
„ inner	¾ in.	⅝ in.
„ outer	⅞ in.	⅞ in.

—F. Kerry (Harwich).

Tree Pipit in North Wales.—Almost every work on British Birds, including Mr. Howard Saunders' recently-published 'Manual,' speaks of the Tree Pipit (*Anthus trivialis*) as a scarce bird in Wales. This, however, is very far from being the case, so far as the counties of Merioneth and Carnarvon are concerned. In both these counties it is very common, probably one of the most abundant of the common migrants, appearing regularly about the 20th of April. It chiefly frequents wet meadow and pasture land in the vicinity of trees and woods, and the alders along the river-banks. Such situations are very numerous in North Wales, and consequently the Tree Pipit finds a congenial home in almost every valley. —G. H. Caton Haigh (Grainsby Hall, Great Grimsby).

Great Grey Shrike near Harwich.—A male specimen of this bird was shot here on the 7th December. The stomach contained the perfect foot of a Sky Lark. It is ten years since the last was killed here (see 'Zoologist,' 1880, p. 70).—F. Kerry (Harwich).

Birds of Devonshire.—We are informed that a book with this title, by Mr. W. E. H. Pidsley, of Blue Hayes House, Broadclyst, is in the press, and will be ready for issue to subscribers early in the spring.

Notes from Scarborough.—This part of the Yorkshire coast has been visited by many birds of interest, some in greater numbers than usual, during the autumnal migration and the first few days of December. In the early part of October a Peregrine Falcon and a Buffon's Skua were shot on Scalbyness the same day, both mature birds, the Skua retaining the long tail-feathers. On Oct. 3rd a Great Skua, two Pomatorhine, and a Fulmar were taken out at sea. The remark in Yarrell's 'British Birds' that the Great Skua is "well known to the Yorkshire fishermen," is, I think, a mistake, as the term "Morrel Hen," which in their vernacular I take to mean *Merle* Hen, is applied to all the Skuas without distinction. The Pomatorhine Skua, Great Black-backed, and Glaucous Gulls have been common, some of the two last-named in mature plumage. Little Gulls have been obtained in some numbers, but out of the many only one in winter dress was adult. It was sent from Flamborough Nov. 30th. A Spotted Crake, captured at Flotmanby, Oct. 16th. Four Great Grey Shrikes were seen in October; one taken on board a smack, and two shot. On Oct. 24th a cinnamon-coloured Chaffinch was shot near here. [There is a similar variety of the Chaffinch in the collection of the late Mr. F. Bond.—ED.] On Oct. 28th a Sooty Shearwater was obtained at Flamborough, and another near Scarborough about the same time. A birdstuffer named Benson showed me a Leach's Petrel he had received from Filey on Nov. 3rd. A fisherman brought two Fulmars and a Great Shearwater that had been taken on hooks to Mr. W. J. Clarke on Dec. 4th; this Shearwater appears to be rare on the Yorkshire coast, and this is the only specimen I have seen during my long residence at Scarborough. Numbers of Red-throated Divers were on the coast about the end of November, and a Sclavonian Grebe was obtained on Dec. 5th. I believe the occurrence of the Red-breasted Flycatcher, *Muscicapa parva*, has been recorded already by Mr. Gurney, who determined the species.—ROBERT P. HARPER (38, Esplanade, Scarborough).

Late Stay of the Turtle Dove.—On Dec. 10th I found, in the Metropolitan Market, a Turtle Dove among a number of Fieldfares and Missel Thrushes, which were said to have come from Norfolk. It was apparently a bird of the year, and probably one of a late brood, for there were no black and white feathers on the sides of the neck, nor were the centres of any of the wing-coverts dark. The breast, however, showed the vinous tint, and the feet were redder than is usually the case in young birds. The bird was freshly killed, but was moulting, and unfit for preservation.—ARTHUR H. MACPHERSON (51, Gloucester Place, Hyde Park, W.)

Notes from Rutlandshire.—On Aug. 10th 1888, I noticed a male Sparrowhawk soaring above the pinetum near the kitchen-garden at Exton Park. This is a seluded spot, and, containing many evergreens, gives shelter to a number of small birds. The hawk was no doubt attracted thither in search of food. The pinetum, indeed, seems to be a favourite resort of these birds, as I have frequently observed them in its vicinity; and it was also close to the same spot that I obtained, in 1886, a female bird of this species, curiously enough in a sieve-trap, while endeavouring to re-capture the lost hawk of a friend, a newly-trained Barbary Falcon, which had gone off in pursuit of a Wood Pigeon on the previous day. The Kestrel, too, may often be seen in this neighbourhood, and its larger and handsomer relative, the Peregrine, has likewise been several times observed of late years at no very great distance. This noble Falcon is, however, I fear, now only a wanderer, though it would be warmly welcomed if it came to stay. Partridges during the summer of 1888 bred fairly well, and there were many coveys of "red-legs,' though not so many as in 1887, which appears to have been a jubilee year for the latter species. On Sept. 17th a Grey Wagtail was seen on the brook below the waterfall in the park at Exton, and as I have never seen or heard of the nest of this bird in the county, I always look upon it as a regular winter migrant in these parts. On the 27th of the same month I noticed the hooting of the Wood Owl, which, as the days commence to shorten, is heard oftener and earlier in the day. Both the Brown and the White Owls are, I am glad to say, fairly common about Exton, and I have often heard several of these birds at a time uttering their curious and varying cries together on an autumn evening. The following day (Sept. 28th), while Partridge-shooting near Cottesmore, I saw a Wheatear in a turnip-field near to that village. The bird was shot by a friend who was with me, and is now preserved in my collection. The first Fieldfare appeared on Sept. 29th (Michaelmas Day) and the first Redwing a few days after, on Oct. 9th. On Oct. 2nd there was a sharp white frost, followed by a fall of snow, which lasted throughout the early morning, but afterwards melted away. This caused the Swallows to congregate in large numbers on that day, and a few days afterwards there were none to be seen. The Hooded Crow appeared on Oct. 15th, and the first Woodcock was seen, but not shot, on the 19th. Three days afterwards (on the 22nd) there were some Tufted Ducks on the ponds in Exton Park, and on Nov. 5th a single male Pochard at the same place. On Oct. 16th some Golden Plovers were observed on the wing near Empingham, and on the 18th, while shooting near Whitwell Village, I flushed a Common Snipe in a field of turnips. This, though really a common enough occurrence, is often looked upon as an unusual thing. A "gaggle" of Wild Geese appeared flying southwards on Nov. 23rd near Horn, but at too great a height for the species to be distinguished;

and on the 29th of the same month there was a Jack Snipe on the marsh above the mill-stream, also at Horn. This bird is not often met with in the neighbourhood, though I have seen several in a day; but it appears to be less common now than in former years. A flock of from twenty to thirty Golden Plover flew across the Exton and Stamford road, almost within shot, on Dec. 18th. They were fired at by a gentleman who was standing near with a gun, but seemed to pass uninjured, as none of them fell. The Golden Plover appears to be a mere passer-by in this county, not resting or residing for any length of time, though a few are occasionally found along the Welland River, on the Northamptonshire border, and again near the Ashwell and Whissendine brooks. Three Goldfinches were seen at Shacklewell Hollow, near Empingham, on Dec. 19th, and in Tunneley Wood on the following day, four Woodcocks rose almost simultaneously out of one patch of briars. I have never before known so many cocks rise so close together in any wood about here, where they are generally few in number, and much scattered. The Goldfinch, though not very often observed, is probably fairly common at times in this district. It is much sought after by birdcatchers, both local and professional, some of whom come from a considerable distance to obtain it. On Dec. 21st an immature example of the Tufted Duck, a female, was obtained on the ponds in Exton Park. The weather being very mild up to the end of the year but few migratory ducks were procured.—GAINSBOROUGH (Exton Park, Oakham).

Hybrid Mallard and Shoveller. — In the fourth edition of Yarrell's 'British Birds' it is stated that the Mallard is known to have interbred with the following species:—Egyptian Goose, Shelldrake, Muscovy Duck, American Dusky Duck, Wigeon, Pintail, and Teal. I may add, on the authority of Mr. Mills, of Bisterne House, Ringwood, that in 1875 a hybrid between the Mallard and Shoveller was shot upon his estate. It had the broad bill of the latter, but in the coloration of its plumage more nearly resembled the former.— G. B. CORBIN (Ringwood, Hants).

White-fronted Goose in Norfolk.—A specimen of the White-fronted Goose was shot in the fen-district of Norfolk on November 23rd. It was a solitary bird, and had settled to a gunner's decoy ducks. The cold weather has probably caused a southward movement amongst the wildfowl, as it has on all our winter visitors, which in this district, without exception, are earlier and more numerous than they have been for years past.—A. SMITH (Nordelph, Downham Market, Norfolk).

Uncommon Birds in Devon.—On the 12th September last a specimen of the Hoopoe was shot in a mangold-field near Exeter. It is not, strictly speaking, a rare bird, as almost every year a few are met with in the county, and it has been known to breed here. A Woodcock, with the primary and secondary feathers of the wings pure white, was obtained near

Exeter the first week in November, and a Hawfinch, a very uncertain winter visitor, was also taken, four or five others being seen at the same time.—W. E. H. Pidsley (Blue Hayes House, Broadclyst).

Great Spotted Woodpecker in Ireland. — There has been a flight of Great Spotted Woodpeckers over Ireland. Several specimens were received from different localities during the end of October and beginning of November; one from Killkeel (Co. Down), another from Doneraile (Co. Cork), and others of which I have not yet ascertained the exact locality.—Edward Williams (2, Dame Street, Dublin).

Great Spotted Woodpecker in Ulster.—There seems to have been an arrival of Great Spotted Woodpeckers here last autumn. The first one I heard of was shot at Millide, near Donaghadee, Co. Down, on Oct. 31st. It was a male in poor plumage. The second was shot at Gilford, Co. Down, on the 4th November. This one was also a male, and in poor plumage. Three were seen at Gilford, and, I am sorry to say, one was shot; it was being pursued and mobbed by Blackbirds. The third one was shot in the deer-park, Glenarm, Co. Antrim, on the 28th November,—a female bird in good plumage,—and was being pursued by several Thrushes. I saw all three birds in the flesh. It will be observed that in two cases the Woodpeckers were being followed and attacked by other birds. I should like to know if the same thing has been observed in England. It may have been because these birds are uncommon here. The last one I have a note of was shot at Newry, 25th October, 1886.—Robert Patterson (1, Windsor Park Terrace, Belfast).

Bittern in Co. Down. — A fine male Common Bittern (*Botaurus stellaris*) was shot near Portaferry, Co. Down, on 3rd December. It was discovered in the middle of a bed of rushes near the margin of a small lake, and was put up with difficulty. A pike, 13 in. long, was taken out of its gullet. This bird measured 4 ft. 1 in. across the wings. — R. Patterson (1, Windsor Park Terrace, Belfast).

American Bittern in Co. Londonderry. — I recently discovered, in a small birdstuffer's shop here, an American Bittern (*Botaurus lentiginosus*). It was shot on Ballyronan Moss, near Maglurafelt, Co. Londonderry, at the end of October last by a farmer named Lennox; sex not ascertained, I have compared it with the illustration and description in Mr. Howard Saunders's 'Manual,' and, as it agrees in all particulars, there can be no doubt about it. I am glad to be able to record this rare bird. — Robert Patterson (1, Windsor Park Terrace, Belfast).

The so-called "Martinico Gallinule" in Ireland.—In preparing a new edition of my 'List of Irish Birds,' I have done my best to clear up the doubts which have long attached to a bird picked up dead near Brandon

Mountain, in Kerry. It will be remembered that, in 1846, Thompson, from a description sent to him by Mr. Richard Chute, announced this bird as *Porphyrio hyacinthinus* of Temminck (Ann. Nat. Hist. vol. xviii. p. 311). Mr. W. Andrews subsequently saw this specimen at Chute Hall, where it still remains, and considered it to be the Martinico Gallinule (*Ionornis martinica*), an identification which Thompson accepted as correct, and under this name mentions the bird in his 'Natural History of Ireland' (Birds, vol. ii. p. 331, footnote). Having asked the assistance of Mr. J. C. Neligan, he and Lord Ventry have very kindly interested themselves in the matter, with the result that, a few weeks ago, Lord Ventry brought up to Dublin a bird of his own, which is labelled as having been obtained "in a cabbage-garden near Odorney, on the River Brick, near Ballyheigne Bay, 10th October, 1873," and which, rather to my surprise, proves to be an undoubted example of *Porphyrio smaragnotus*. Lord Ventry further assures me that his bird is identical with the "Martinico Gallinule" preserved at Chute Hall, so that in all probability we must now conclude that the latter also is *P. smaragnotus*, and that Lord Ventry's specimen is a second example of the same species, which, of the two Porphyrios, might have been thought the less likely to occur in Ireland. Mr. Neligan and Lord Ventry very kindly tried to obtain for me the loan of the original specimen, but this was not found possible, as the bird is locked up in a glass case, and the owner was absent from home, so that I could not examine it myself; but it may be added that in Mr. Chute's description, as quoted by Thompson, the bird is described as having the back and shoulders bottle-green, and that Thompson found Mr. Chute's measurements to agree with those of *Porphyrio hyacinthinus* (*cæruleus*), which is a much larger bird than *Ionornis martinica*. — A. G. More (74, Leinster Road, Dublin).

Porphyrio smaragnotus and P. cæruleus in Ireland.—In addition to the two examples of *Porphyrio smaragnotus* above mentioned under my note on the Irish Martinico Gallinule, and both of which were obtained in Kerry, Mr. J. H. Gurney informs me that there is an Irish specimen of *P. cæruleus*, but unfortunately without date or locality, in the collection of Mr. John Marshall, of Taunton.—A. G. More (74, Leinster Road, Dublin).

[Perhaps Mr. Marshall will kindly communicate the history of this specimen.—Ed.]

Reported Occurrence of the Black-winged Stilt near Nottingham an error. — I was sorry to let the December number of 'The Zoologist' be published without a letter from me of explanation about the Black-winged Stilt, stated (p. 337) to have been killed at or near Nottingham. Correspondence with Mr. J. Whitaker, of Rainworth, and with Mr. Cording, of Cardiff, has since led me to believe that the Stilt in question was never killed in England at all, but is a foreign skin. White, the man who, Mr. Cording says, shot the Stilt, is at the present time working for him at his shop in Cardiff. Mr. Whitaker asked a man in Nottingham, who knew White well, and he elicited from him that, so far as he knew, White had not handled a gun for the last two years. Moreover, as this Nottingham birdstuffer knew White well, and was also in the habit of communicating the occurrence of any rare or interesting bird to Mr. Whitaker, it seems highly improbable that the occurrence of such a rarity as the Black-winged Stilt should have been unmentioned. I think it only right that I should at once lay these facts before the readers of 'The Zoologist,' for there is no doubt whatever in my mind that Mr. Cording disposed of a foreign-killed bird as a British one, and I think that such practices (too common with birdstuffers generally, I am afraid) should be immediately exposed, and collectors put on their guard. — Digby S. W. Nicholl (The Ham, Cowbridge, Glamorgan).

American Bittern in Co. Kildare. — An American Bittern (*Botaurus lentiginosus*) was shot on Maddenstown Bog, Co. Kildare, on October 31st last. It is a very rare visitor, having hitherto only occurred six times in Ireland.— R. F. Scharff (Science and Art Museum, Dublin).

Protection of Birds on the Farne Islands.—Reporting on the result of the measures taken to protect the sea-birds which resort to the Farne Islands during the breeding season, Mr. H. G. Barclay says:—"I have every reason to believe that the birds were very well protected in 1889. I visited the Islands twice, and each time I satisfied myself by personal investigation that the birds had not been unduly disturbed. My last visit was on the 3rd of July, in company with Mr. J. H. Gurney, jun. On this occasion I noticed a considerable number of young birds. I mention this to show that there had been no general robbery of eggs. Sometimes a few were taken, and one or two such cases were reported to me, but I thought it best to take no notice of them, except by a letter of remonstrance in one rather flagrant case. Early in the breeding season I thought it seemed advisable to order the collection, three times a week, of all the Gulls' eggs that were laid on the Islands. This continued until the 24th of May, after which date the Gulls were not further molested. Eighteen hundred eggs were taken and distributed amongst the fishermen in the neighbourhood, and this, I believe, helped to promote a more friendly feeling towards the watchers on the Islands, and also prevented a too early increase in the number of young Gulls, which is not desirable where they breed in close proximity to birds of a less rapacious character. No harm attached to the Gulls, as I can testify, for they hatched off in considerable numbers towards the end of June and the beginning of July. The weather was more favourable than last year, but the watchers reported to me that many young birds were destroyed by heavy rains about the second week in July. There was a marked increase in the number of birds last summer. This I specially noticed, and my own impressions were generally confirmed by the opinions of others. Mr. Nelson, of Redcar, wrote me on the 15th June:—'Gulls, Puffins, and Guillemots about as plentiful as formerly. Eiders more numerous. Common and Arctic Terns plentiful, but fewer eggs. Cormorants on the increase.' Mr. Cresswell Cresswell wrote;—'Far more birds than last year, and the large increase was very apparent.' In a letter from Mr. Paynter, he says;—'I think there were twice as many Terns as usual: * * * * As regards the Roseate Terns there were at least two pairs. * * * There were also more young Ring Dotterels than usual. At least one Sheldrake brought out a brood on the Islands. * * * Cormorants were also plentiful. The Black-backed Gulls as numerous as usual, and about the old number of Herring Gulls.' Darling, the watcher on the Inner Farnes, and his assistant, counted the nests of the Sandwich Terns on or about the 13th of Jnne, and found that 220 pairs were sitting on eggs at that date. They also counted 72 Eider Ducks' nests on the Knoxes and Wideopens. White, the watcher on the Outer Farnes, informed me, at the end of the season, that 66 Eider Ducks' nests were hatched off from the Islands under his charge, producing 253 young birds. Mr. Nelson counted 117 Kittiwakes' nests, nearly all with young birds in them; and Mr. Cuthbertson informed me there were 120 Cormorants' nests this year on the Megstone. I received very few applications for leave to take eggs last summer. I allowed Mr. Gerrard, President of the Wakefield Naturalists' Society, to take two eggs of each species of bird. A similar collection was made by the watchers for the Rev. C. F. Thorp, son of the owner of the Inner Farnes; and Mr. Pybus, of Newcastle, had permission, very early in the season, to take a few Lesser Black-backed Gulls' eggs. Last year, at the request of the authorities, as mentioned in my report, I allowed some young birds to be taken from the Islands for the purpose of being placed on the lake in St. James's Park, London. The following extract from a letter I received from Mr. Rilly, the bird-keeder there, may be thought interesting:—'The only birds alive now, of those brought from the Farne Islands, are the Cormorants, which are thriving. The Puffins all died during the first three months. The Guillemots lived somewhat longer, the death of the last one being the result of an accident. The one Kittiwake also died by an accident. The Terns died during the severe frost, being apparently unable to get about on the ice: their tails and wings collected the ice, I suppose, on account of their being pinioned and not being able to use their wings freely.'"

The Colour of Pallas's Shrike, Lanius major.—In the eighth volume of the 'Catalogue of the Birds in the British Museum' (p. 238), Dr. H. Gadow describes *Lanius excubitor* as being "pale whitish grey on the rump and upper tail coverts," and *Lanius major* (p. 239), as differing from it "in having the lower rump and upper tail coverts white." Pale whitish grey well describes the colour of those parts in *excubitor*, though the exact shade varies in different specimens. But I certainly should not expect *L. major* to have white upper tail coverts, *i.e.*, *paler* than those of *L. excubitor*. For this reason: in this group of Shrikes the degree of development of the white on one part of the bird is greater or less in proportion to its development on the other parts; but there seem to be some exceptions to this rule. For example, as an instance of the rule applying, in my two specimens approaching *L. homeyeri*, in which species the white on the secondaries and tail is much more extensive than in *L. excubitor*, the upper tail coverts are pure white and the rump paler than in that species. Something must doubtless be allowed for age, and perhaps sex. Thus *L. borealis*, in adult summer plumage, is described by Dr. Gadow as having a pure white rump and upper tail coverts. But young birds appear from his descriptions to have these parts coloured. In my specimen from Massachusetts (apparently a young bird in winter dress), they are pale grey, with a strong wash of light brown. This made me think that perhaps *L. major* did not acquire the white rump until quite adult. For I have for some time been possessed of a Norfolk example of this form (evidently a young bird, from the well-marked and extensive vermiculations on the under surface, and the wash of pale brown on the head and mantle), which has the rump and upper tail coverts grey, quite as dark as in the darkest of my three skins of the typical *excubitor*, or as in even two birds intermediate between that form and *L. major*. This winter, however, I have obtained a specimen of Pallas's Shrike, killed at Wardington, Oxon, in November, which, as far as I can see is quite adult, but still has the rump and upper tail coverts *grey*. The vermiculations, always present in this species, do not extend on to the cheeks and lower throat, as in my immature specimen; and although there is a slight wash of warm brown on the cheeks and breast, more apparent at the sides of the latter, this is extremely faintly developed, if at all, on the head and back. This Wardington bird is the darkest-coloured Grey Shrike I ever saw, quite a plumbaceous grey on the head and back, as dark as that of *L. meridionalis*, but without the blue cast. The rump is the same dark grey as the back, and the tail coverts are darker than those of any other Grey Shrike I have, but are slightly tinged with a brownish colour. I am aware that Mr. Seebohm says of *L. major*, "the thoroughbred adult male * * * differing from the Great Grey Shrike in having a white rump," and although I do not presume to call his opinion and that of Dr. Gadow in question, I should be very glad to know if *L. major* is generally observed to have a white rump and upper tail coverts, and if so, then to what form my two birds with grey rumps and upper tail coverts (one at least of which cannot be called young), which agree with the description of *L. major* "in having the white at the base of the secondaries almost obsolete," are to be referred. In my specimens, careful search only reveals a very little white next the shaft of the feathers at their extreme bases. If my birds are not pure *L. major*, they must be intermediate between that form and *excubitor*. And if it is really true that *L. major* with white on the secondaries "almost obsolete," has a white rump and upper tail coverts, then, surely, birds intermediate between this form and the pale-rumped *excubitor* ought not to have those parts *darker* than in the latter, as they certainly have, if my birds are intermediate and not pure-bred *major*, as I am inclined to believe them to be. On the other hand, if these grey-rumped birds are intermediate, then, *à fortiori*, *L. major* should have a grey and not a white rump. And if my birds are pure-bred *L. major*, then this form *has* a grey rump.—O. V. APLIN (Bloxham, Oxon).

FISHES.

Large Roach and Perch in the Hampshire Avon.—As I am informed that Roach of 2 lbs. weight are rarely met with, I may note that last October two were landed by a gentleman who was fishing in the Avon, each of which weighed 2 lbs. At the same time (within a week) he also caught a suberb Perch, weighing 3½ lbs., and a Pike 18½ lbs.; the latter, of course, is nothing extraordinary, but, although I have recorded a Perch of a similar weight (Zool. 1883, p. 471), yet this specimen was so perfect in condition, form, colour, and markings, that it was the admiration of all who saw it. A very finely-marked Trout, weighing 7 lbs., was also caught in July last in the same water. Several fine Salmon were "brought ashore" early in the season, but I believe there were oftener more rods plied than fish to be caught, at least in the upper portions of the river. — G. B. CORBIN (Ringwood, Hants).

CEPHALOPODA.

Gigantic Squid on Achill Island.—Mr. J. R. Sheridan, of Dugort, Achill Island, writes to the 'Mayo Examiner,' Nov. 9th:—On the little strand at Dugort, in Achill Island, on the west coast of Mayo, now lie the remains of one of the most curious animals perhaps to be met with in the animal kingdom. It was stranded some months ago on one of the outlying reefs at the entrance of Blacksod Bay, when the villagers took it to be the carcase of a large Whale. It was afterwards carried on to the Achill strand by the gale of the 4th October, which swept over the western ocean with great fury. This large sea-monster is no doubt a gigantic Squid, and is of such rare occurrence on our shores that it should not go unrecorded. To what species it belonged will ever remain unknown, as it was too far gone in decay for identification. The measurement of this curious monster, though shrunk and distorted, was as follows:—Length of two long arms or tentacles, each 30 ft.; circumference of body, including the short arms, 60 ft.; circumference of tentacles, in some places 4 ft. There are three instances of such a monster having been found in British waters, and are as follows:—One stranded on the coast of Kerry, more than 200 years ago ('Zoologist, 1875, p. 4526), another recorded from Shetland by Mr. Gwyn Jeffreys, and the last we read of was captured off Boffin Island, Mayo, a portion of which was sent to the Museum of Dublin, and named and identified by Mr. A. G. More, in 'The Zoologist' for 1875 (p. 4569).

CRUSTACEA.

Foreign Substances attached to the Shells of Crustacea.—At the last meeting of the Linnean Society I exhibited a number of Crabs and certain shells of the genus *Phorus* having various foreign substances attached to them, about which it is desirable that more should be known. Some of the Crabs manage to fasten bits of sea-weed to the hairs on the carapace and legs; Polyzoa, Balini, Serpulæ, &c., in their earlier stages, fasten themselves on others; a Crab of the Indian Seas—*Camposcia retusa*—is sometimes completely covered on every part with sand, small shells, and bits of sea-weed—coralline chiefly. These could only be attached by some adhesive matter, but whence derived? *Dromia vulgaris* is occasionally found with a sponge extending over the carapace, and almost completely hiding the animal. The species of this genus have two hinder pairs of legs much reduced, flattened, and lying close to the back, and this is assumed to be an adaptation for the purpose of retaining the sponge. Out of a number of specimens dredged in the Bay of Naples, I recollect only getting one with a sponge on it, and that very soon shrivelled up, leaving a leathery-looking substance attached to the base of the carapace, not held by the legs apparently. Bell, in his 'British Crustacea' (p. 371), states having received "numerous young specimens from Sicily, every one of which had the carapace entirely covered with a sponge, which had grown over it, concealing even the two hinder pairs of legs, which were closely placed against the back, and rendered immovable." No mention is made of a sponge on those that came from the Channel. Two Crabs—*Æthusa mascarone* and *Dorippe lanata*—having similarly reduced hind legs, but directed upwards, seem much better adapted for retaining a foreign substance, which, however, they are not known to do. In a Mauritian Crab—*Dynomene hispida*—the hind pair only are reduced, but to such an extent as to be merely rudimentary and incapable of any use. *Paramithrax barbutus*—a New Zealand Crab—has, like some others, hooked hairs; but in the specimen exhibited they appear to be free of any foreign substances, although many small fragments of an uncertain nature appear between them. In *Phorus* a strong cement only could hold on those large and heavy substances,—shells, stones, &c.,—completely covering the shell, as in *P. agglutinans*. I have not seen any account of their *modus operandi*, but, as the animals have a long proboscis, it is possible that that may be the organ employed; but it is difficult to believe that it would be able to lift any arge substance, or that it could reach the top of the shell. Another difficulty is that they must cast off, from time to time as they grow, the smaller substances to replace them by larger ones. There is one *Phorus*, however—*P. calyculatus*—in which small shells imbed themselves at short intervals along the whorls, leaving the greater part of the shell uncovered; these little cup-shaped depressions are marked inside, as far as the mouth of the shell will permit them to be seen, by corresponding protuberances. This would seem to indicate a certain softening of the shell at one time or other. I do not see where protection comes in in any of these cases.—FRANCIS P. PASCOE.

SCIENTIFIC SOCIETIES.

LINNEAN SOCIETY OF LONDON.

Nov. 21, 1889.—Mr. W. CARRUTHERS, F.R.S., President, in the chair.

Mr. Edward E. Prince was admitted, and Col. J. H. Bowker was elected a Fellow of the Society.

Prof. Duncan exhibited and made remarks on a stem of *Hyalonema Sieboldii*, dredged between Aden and Bombay, a remarkable position, inasmuch as this glass sponge had not previously been met with in any waters west of the Indian Peninsula. Prof. Stewart criticised the occurrence, and referred to a parasite on the sponge which had been found to be idenical with one from the Japanese Seas.

Mr. James Groves exhibited, and gave some account of, a new British Chara, *Nitella batrachiosperma*, which had been collected in the island of Harris.

Mr. Thomas Christy exhibited some bark of *Quillaia saponaria*, from Chile, which has the property of producing a great lather, and is extensively used for washing silk and wool. It is now found to solidify hydrocarbon oils and benzoline, and thereby to ensure their safe transport on long voyages; a small infusion of citric acid rendering them again liquid.

Dr. F. Walker exhibited and made remarks on some plants collected by him in Iceland.

Mr. W. Hachett Jackson gave an abstract of an elaborate paper on the external anatomical characters distinctive of sex in the chrysalis, and on the development of the azygos oviduct, in *Vanessa Io*.

Mr. E. B. Poulton followed by giving a *résumé* of his researches on the external morphology of the lepidopterous pupa. Mr. J. H. Leech gave an account of some new Lepidoptera from Central China.

Dec. 5.—Mr. J. G. Baker, Vice-President, in the chair.

The following were elected Fellows of the Society:—Rev. J. H. Crawford, Major A. R. Dorward, Messrs. S. A. Moor, W. Rome, J. Shirley, H. L. Stonham, C. W. Turner, J. T. Tristram Valentine, J. H. Veitch, J. J. Walker, and John Watson.

Mr. George Murray exhibited and made some remarks upon specimens of *Struvea macrophylla* and *S. plumosa*.

Mr. A. W. Bennett communicated some observations on a new and a little-known British Freshwater Alga, *Schizothrix anglica* and *Sphæroplæa annulina*. It was pointed out that *Schizothrix* of the 'Phycologia Britannica' is really an *Inactis*.

Mr. E. M. Holmes exhibited, as a new British Marine Alga, a specimen of *Gracillaria divergens*, a rare native of the warmer portions of the Atlantic and the Mediterranean, which had been recently found at Brighton by Mr. J. Myles. The specimen exhibited possessed tetrasporic and cystocarpic fruits not described by Agardh.

Mr. Pascoe exhibited (with a view of eliciting information as to the *modus operandi*) a number of Crustacea and certain shells of the genus *Phorus* having various foreign substances attached to them. Commenting upon these specimens, Prof. Stewart gave an interesting account, from personal observation, of the way in which certain Crustacea collect and adorn themselves with fragments of shell, sea-weed, &c., apparently as a protective covering.

Mr. T. Christy exhibited and made remarks on some "liquid amber," or resin, *Attingia excelsa*, from Cochin China.

A paper was then read, by Mr. George Massee, on the life-history of a stipitate Freshwater Alga, illustrated by some excellent diagrams. A discussion followed in which the Chairman, Mr. Murray, and Mr. Bennett took part.

In the absence of the author, Mr. Harting detailed the chief points of interest in a paper, by Mr. George Sim, on the anatomy of the Sand Grouse, *Syrrhaptes paradoxus*, and the habits of this bird as observed on the sand-hills of the coast of Aberdeenshire. A comparison was made of the sternum and the alimentary organs with the same parts in the Pigeon and Red Grouse.

ZOOLOGICAL SOCIETY OF LONDON.

Nov. 19, 1889.—Prof. FLOWER, C.B., LL.D., F.R.S., President, in the chair.

The Secretary read a report on the additions that had been made to the Society's Menagerie during the month of October, 1889, and called special attention to the arrival of a young male Gaur, *Bibus gaurus*, from Pahang, one of the native States in the Malay Peninsula, presented to the Society by Sir Cecil C. Smith, Governor of the Straits Settlement.

The President exhibited and made remarks on a head of an African Rhinoceros, *Rhinoceros bicornis*, with a third posterior horn partially developed. The animal from which it was taken had been shot by Sir John Willoughby, in Eastern Africa.

The Secretary exhibited a skin of an albino variety of the Cape Mole-Rat, *Georychus capensis*, forwarded to the Society by the Rev. G. H. R. Fisk, of Capetown.

Mr. A. Smith-Woodward exhibited and made remarks on a portion of the rostrum of an extinct Saw-fish (*Schlerorhynchus*) from the chalk of Mount Lebanon.

Mr. Goodwin exhibited and made remarks on specimens of some rare Paradise-birds obtained by him on Mount Owen-Stanley, New Guinea, when in company with Sir William Macgregor's recent expedition; also some photographs taken on the same occasion.

A communication was read from the Rev. Thomas R. R. Stebbing and Mr. David Robertson, containing the descriptions of four new British Amphipodous Crustaceans. These were named *Sophrosyne robertsoni*, *Syrrhoë fimbriata*, *Podoceropsis palmatus*, and *Podocerus cumbrensis*. Of these *Sophrosyne robertsoni* belonged to a genus first observed at Kerguelen Island.

Mr. G. W. Butler read a paper on "The Subdivision of the Body-cavity in Lizards, Crocodiles, and Birds," in which an attempt was made to analyze the complex conditions of the membranes observable in the last two groups, and to express them in terms of the simpler structures found in the Lizards.

Mr. J. H. Leech read the third part of his paper on the Lepidoptera of Japan and Corea, comprising an account of the *Noctuæ* and *Deltoidæ*; in all upwards of 475 species. Of these forty-six were now described as new to science, and two others were considered to be varietal forms.

Mr. R. Lydekker read a paper on the remains of a Theriodont Reptile from the Karoo System of the Orange Free State. The remains described were an associated series of vertebræ and limb-bones of a comparatively large Theriodont, which was probably different from any described form. The humerus was of the normal Theriodont type, and quite distinct from the one on which the genus *Propappus* had been founded, which the author considered to belong to a form closely allied to, if not generically identical with, *Pariasaurus*.

Mr. G. B. Sowerby read the descriptions of thirteen new or rare species of Land-Shells from various localities.

A communication was read from Mr. Edward A. Minchin, containing an account of the mode of attachment of the embryos to the oral arms of *Aurelia aurita*. It was shown that the embryos of *Aurelia aurita* are developed on the arms, in broad capsules formed as evaginations of the walls of the oral groove, and that the capsules increase in size with the addition of more embryos.

Dec. 3, 1889.—Osbert Salvin, Esq., F.R.S., Vice-President, in the chair.

The Secretary read a report on the additions that had been made to the Society's Menagerie during the month of November.

An extract was read from a letter received from the Rev. G. H.R. Fisk concerning some specimens of *Bipalium kewense*, which he was keeping in captivity at Capetown.

Mr. Henry Seebohm exhibited and made remarks upon some specimens of new or rare species of birds lately received from the Bonin Islands, North Pacific.

Mr. Sclater exhibited and made remarks on an egg of the Crested Screamer, *Chauna chavaria*, from the collection of Mr. J. J. Dalgleish.

Mr. F. E. Beddard read the first of a series of contributions to the anatomy of Picarian birds. The present communication treated of some points in the structure of the Hornbills (*Bucerotidæ*), particularly of the syrinx, and of the muscular anatomy of these birds.

Mr. Beddard also read a paper upon the anatomy of Burmeister's Cariama, *Chunga burmeisteri*, and pointed out the differences between this form and *Cariama cristata*.

Mr. G. W. Butler read a paper on the relations of the fat-bodies (subperitoneal and subcutaneous) of the Sauropsida. The author showed that a consideration of the subperitoneal fat-bodies appeared to throw light on the condition of the abdominal membranes in the Monitors.

A communication was read from the Rev. H. S. Gorham, containing descriptions of new species of the Coleopterous family *Erotylidæ* from various localities.

A communication was read from Mr. L. Taczanowski, containing the description of a new Warbler of the genus *Locustella* from Corea, which he proposed to call *Locustella pleskei*.

Mr. Oldfield Thomas pointed out the characters of a new Mungoose, allied to *Herpestes albicaudatus*, which he proposed to call *H. grandis*. The type specimen (a skeleton) had been obtained by Mr. T. E. Buckley in S.E. Africa.—P. L. Sclater, *Secretary*.

Entomological Society of London.

December 4, 1889.—The Right Hon. Lord Walsingham, M.A., F.R.S., President, in the chair.

Prof. Franz Klapálek, of the Zoological Department, Royal Museum, Prague, was elected a Fellow of the Society.

Mr. W. L. Distant exhibited, on behalf of Mr. Lionel de Nicéville, a branch of a walnut tree, on which was a mass of eggs laid by a butterfly belonging to the *Lycænidæ*. He also exhibited two specimens of this butterfly, which Mr. de Nicéville had referred to a new genus and described as *Chætoprocta odata*. The species was said to occur only in the mountainous districts of North-West India, at elevations of 5000 to 10,000 feet above the sea-level.

Dr. D. Sharp exhibited the eggs of *Piezosternum subulatum*, Thunb., a bug from South America. These eggs were taken from the interior of a specimen which had been allowed to putrefy before being mounted. Although the body of the parent had completely rotted away, the eggs were in a perfect state of preservation, and the cellular condition of the yelk was very conspicuous. Dr. Sharp also exhibited a specimen of *Pœcilochroma lewisii*, Dist., a Pentatomid bug from Japan of a dull green colour, which when damped with water became almost instantly of a metallic copper colour.

Mr. J. H. Leech exhibited a large number of Lepidoptera recently collected for him by Mr. Pratt in the neighbourhood of Ichang, Central China. The collection included about fifty-four new species of butterflies and thirty-five new species of moths.

Capt. Elwes observed that he noticed only two genera in this collection which did not occur at Sikkim, and that the similarity of the insect fauna of the two regions was very remarkable. He added that about fifteen years ago, in a paper "On the Birds of Asia," he had called attention to the similarity of species inhabiting the mountain ranges of India, China, and Java.

Mr. M‘Lachlan remarked that he had lately received a species of dragonfly from Simla which had previously only been recorded from Pekin.

Mr. Distant said he had lately had a species of *Cicada* from Hongkong, which had hitherto been supposed to be confined to Java.

Mr. W. H. B. Fletcher exhibited a preserved specimen of a variety of the larva of *Sphinx ligustri*, taken in a wood near Arundel, Sussex. Mr. W. White asked if the larva was normal in its early stage; he also exhibited drawings of the larvæ of this species, and called especial attention to one of a variety that had been exhibited at a previous meeting by Lord Walsingham.

Mr. F. D. Godman read a long letter from Mr. Herbert Smith, containing an account of the Hymenoptera, Diptera, Hemiptera, and Coleoptera he had recently collected in St. Vincent, where he was employed under the direction of a Committee of the Royal Society, appointed to investigate the Natural History of the West Indies. A discussion followed, in which Dr. Sharp, Capt. Elwes, Lord Walsingham, and Mr. M‘Lachlan took part.

Capt. Elwes read a letter from Mr. Doherty, in which the writer described his experiences in collecting insects in the Naga Hills by means of light and sugar. Mr. Doherty expressed an opinion that light, if used in very out-of-the-way places, rather repelled than attracted insects; in fact, that they required to be accustomed to it, and that the same remarks applied to "sugar."

Colonel Swinhoe said that the attractive power of light depended very much on its intensity, and on the height of the light above the ground. By means of the electric light in Bombay he had collected more than 300 specimens of *Sphingidæ* in one night. Mr. J. J. Walker, R.N., stated that he had found the electric light very attractive to insects in Panama. Mr. M'Lachlan, Dr. Sharp, Mr. Leech, Capt. Elwes, the Rev. Canon Fowler, Mr. A. J. Rose, and others continued the discussion.

Mr. Lionel de Nicéville communicated a paper entitled "Notes on a new genus of *Lycænidæ*."

Mr. F. Merrifield read a paper entitled "Systematic temperature experiments on some Lepidoptera in all their stages," and exhibited a number of specimens in illustration. The author stated that the darkness of colour and the markings in *Ennomos autumnaria* resulted from the pupæ being subjected to a very low temperature. In the case of *Selenia illustraria*, exposing the pupæ to a low temperature had not only affected the colour of the imagos, but had altered the markings in a striking manner.

Lord Walsingham observed that it appeared that exposure to cold in the pupa-state produced a darker colouring in the imago, and that forcing in that stage had an opposite effect; that insects subjected to glacial conditions probably derived some advantage from the development of dark or suffused colouring, and that this advantage was, in all probability, the more rapid absorption of heat. He said he believed that an hereditary tendency in favour of the darker forms was established under glacial conditions, and that this would account for the prevalence of melanic forms in northern latitudes and at high elevations. Capt. Elwes, Mr. Jenner Weir, Dr. Sharp, and others continued the discussion.—H. Goss & W. W. Fowler, *Hon. Secs.*

NOTICES OF NEW BOOKS.

Notes on Sport and Ornithology. By His Imperial and Royal Highness the late Crown Prince Rudolf of Austria. Translated with the author's permission by C. G. Danford. 8vo, pp. 648. London: Gurney & Jackson. 1889.

His well-known love of natural history and keen enjoyment of field sports, coupled with the unusual facilities for indulging such tastes which his exalted position afforded him, would lead one to expect in the narrative of the Crown Prince's experiences a most entertaining book. Nor will the reader be disappointed, especially if he be an ornithologist, for to this branch of Zoology was the Prince chiefly addicted. He was particularly interested in the larger birds of prey, and felt as much triumph in stalking and shooting an Eagle as he did in slaying a deer. Few men probably have ever had the chance of killing so many Eagles as he had, and it was something to boast of that he had seen in their natural haunts, and had outwitted and shot with his own gun or rifle, such grand Raptores as the great Sea Eagle, the Golden, the Imperial, the Spotted, Bonelli's, and the Booted Eagles, to say nothing of Ospreys, Kites, and Buzzards, and the Great Eagle Owl. His adventures in search of these and other birds whose haunts lay in the wildest parts of his dominions are simply yet graphically told in the book before us, and are interspersed with still more stirring episodes relating to the chase of the Wolf, Bear, and Wild Boar.

The first portion of the volume is occupied with an account of an expedition to the low-lying, swampy, yet well-wooded, district of the Lower Danube, where several pairs of White-tailed and Imperial Eagles had their eyries, where Ospreys fished unmolested, Kites and Marsh Harriers preyed upon a great variety of water-fowl, and Herons, Night Herons, Bitterns, Ibises, Egrets, and Cormorants nested, it might almost be said, in profusion; so wild, so lonely, and so generally inaccessible was their chosen stronghold.

In this paradise for ornithologists fifteen days were spent, in company with Drs. Brehm and Von Homeyer, assisted by guides, keepers, and skilled taxidermists to preserve such trophies as were selected for the royal collection. Every evening after dinner, as the members of the party enjoyed the post-prandial cigar on board the little steamer which conveyed them, the events of the day were discussed and noted in the journal, the specimens obtained were examined, admired, and properly labelled, and the programme for the next day arranged. Everything was done methodically and well, and no opportunity was lost of learning as much as possible about the fauna of the country explored. The general accuracy of the observations made is apparent upon every page of the book, not only in connection with the expedition down the Danube, but also in regard to the 'Journey in the East' (Egypt to the Nubian frontier and Palestine), and the sketches of sport and natural history in Spain and Transylvania which follow.

Nowhere do we remember to have read so good an account as is given (pp. 409—415) of the Cinereous Vulture, as observed at Gödöllö, in Central Hungary, and in the great woods of Syrmia and Fruska-Gora, on the right bank of the Danube. In these districts it is a true forest bird as regards its nesting and roosting-places, for both are situated in the midst of woods many miles in extent. Its food it seeks beyond the wooded mountains among the bare stony hills that slope partly northwards to the Danube, and partly southwards to the valley of the Save, and the author was convinced that those which breed in the Fruska-Gora range into the Bosnian and Servian Mountains in search of prey. During the afternoon they like to rest on rocks, and where these are scarce they evidently search for them and congregate there. In the midst of the Fruska-Gora Woods was only one very small group of rocky pinnacles, and these of an afternoon were crowded with Vultures, while the extraordinary quantity of droppings, castings, and feathers lying about showed that the spot must be a favourite resort of these huge raptorial birds.

Did space permit there are many interesting observations which we should like to quote, but must refer the reader to the book itself. English naturalists who are unable to read it in the original German will be grateful to Mr. Danford for his excellent translation.

There are no illustrations or route-maps, which, we think, is to be regretted, especially as an artist accompanied the royal party; but what is intended for a portrait of the Prince (with his first Bear lying dead in the snow), appears as a frontispiece, though it is not in the least degree like him. We speak advisedly, having had the honour of spending the best part of two days in his company only a few months before the Danubian Expedition was undertaken, and having seen him again in June, 1887. His photograph, presented by himself, lies before us as we write. It is but fair to add that the frontispiece is the only unsatisfactory page in the whole volume.

The Birds of Oxfordshire. By O. V. Aplin. 8vo, pp. 213. With a map. Clarendon Press, Oxford. 1889.

Partly by personal observation, and partly through the assistance of friends and correspondents who have paid attention to the birds to be found in Oxfordshire, Mr. Aplin has brought together a good deal of information on the subject, and has arranged it concisely and well. In an Introduction of some twenty pages he has sketched the physical features of the county, and noticed the principal published sources of information from which any ornithological notes relating to Oxford could be gleaned. These are by no means numerous, the most important being a list of the Birds of Oxfordshire, comprising 232 species, contributed by the Revs. A. and H. Matthews to the pages of 'The Zoologist' in 1849—50. Dr. Lamb's 'Ornithologia Bercheria,' written about 1814, but printed for the first time in 'The Zoologist' for 1880, is also quoted, as is Mr. Fowler's list of 104 species appended to his little book, 'A Year with the Birds.' From these and other sources Mr. Aplin has been able to find evidence of the occurrence of 242 species, of which 60 are regarded as resident in the county, 71 periodical migrants, and 111 occasional or accidental visitors.

Amongst the changes in the avifauna which have taken place within the century, Mr. Aplin deplores the almost total disappearance of the Kite, Buzzard, Harrier, Raven, and Bittern. The trips of Dotterel once seen regularly on their passage in spring and autumn are now rarely observed, and the Stone Curlew no longer rears its young on the stony fields on the hills about Sarsden and Chadlington, and has probably entirely ceased to breed in the county, save in one locality in the extreme south. The Quail is less often seen, and in fewer numbers than formerly, a fact observed in other parts of England. On the other hand, the Goldfinch, which, as a breeding species, had a few years since become very scarce, has within the last four or five years (probably owing to the operation of the Wild Birds Protection Act) been steadily increasing again, and at the present time is fairly numerous. The Red-legged Partridge, too, which fifty years ago was very rare, is increasing and spreading, and is now generally distributed over most parts of the county. The Hawfinch, Wood Pigeon, Starling, and Sparrow are likewise included amongst the species which have been observed to be more plentiful of late years.

Amongst the rarer birds included in his list, Mr. Aplin seems to set great store by the Alpine Chough, *Pyrrhocorax alpinus*, a specimen of which was shot in the park at Broughton in April, 1881, and a coloured plate of which does duty as a frontispiece. As this species is not migratory, and no other specimen has been noted elsewhere in England, we think too much importance has been attached to the Broughton specimen (see 'Zoologist,' 1881, pp. 422, 471, and 1882, p. 431); at the same time it may be said that, if really a wild bird, and not escaped from confinement, it is as remarkable a bird as any which has been found in Oxfordshire, unless perhaps the Andalusian Hemipode, which has occurred in but one other English county.

Index Generum Avium. A List of the Genera and Subgenera of Birds. By F. H. Waterhouse, Librarian to the Zoological Society of London. 8vo, pp. 240. London: Porter. 1889.

With such an excellent library at his command as that of the Zoological Society of London, Mr. Waterhouse has had the best possible material for the preparation of such an Index as the present, and right well has he utilised it. The labour must have been considerable, for he has found, and arranged alphabetically, about 7000 names of genera and subgenera which have been employed by various authors since 1766, the date of the 12th edition of Linnæus's 'Systema Naturæ,' the starting-point of modern zoological nomenclature.

Such an Index was very much needed, and ornithologists who may consult it will be saved a considerable amount of time and trouble, since they will be spared many a journey to see some old book which they do not possess, and perhaps only desire to consult for the purpose of acquiring the very information which Mr. Waterhouse has extracted.

As regards the accuracy of the 'Index,' we can only say that we have tested it critically in various places, and have looked for several little-known and now disused genera, all of which we have found correctly entered. This being so, we can cordially recommend it as a most useful addition to the bookshelf of any worker in systematic Ornithology.

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